

# **Nontraditional and Emerging Transportation Technology (NETT) Council**

## Annual Report

**December 2023**



U.S. Department of Transportation

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# Purpose

This annual report for calendar year 2022 provides an overview of the activities of the Nontraditional and Emerging Transportation Technologies (NETT) Council during its first calendar year of reestablishment, fulfilling the requirement outlined in 49 U.S.C. § 313(h).<sup>1</sup>

# Background

## NETT Council Mission and Purpose

The NETT Council was established in December 2018 by U.S. Department of Transportation (DOT) Order 1120.34 as an internal DOT body for non-traditional and emerging transportation technologies not yet established enough to fit into modal categories or that require new policy approaches. The NETT Council was later authorized as described in Section 25008 of the Infrastructure Investment and Jobs Act (IIJA, Pub. L. 117-58) and codified at 49 U.S.C. § 313.

The NETT Council is tasked with identifying and resolving jurisdictional, regulatory, and program gaps or inconsistencies associated with nontraditional and emerging transportation technologies, modes, or projects pending or brought before the DOT. The intent of the NETT Council is to reduce, to the maximum extent practicable, impediments to the prompt and safe deployment of new and innovative transportation technology, including with respect to safety oversight, environmental review, and funding and financing issues.

## Legislative Requirements

Pursuant to 49 U.S.C. § 313(f) the NETT Council must meet no fewer than four times per year. The Council considers current and proposed issues and makes recommendations for each in accordance with its stated mission. Per 49 U.S.C. § 313(d), the NETT Council is required to publish a document outlining the initial guidelines by which it operates, as well as annually post a report to the web describing the activities of the Council in the preceding calendar year (49 U.S.C. § 313(h)). This document fulfils the requirement for an annual report.

## Membership

Pursuant to 49 U.S.C. § 313(b), the Council consists of:

- the Secretary, who shall serve as an *ex officio* member of the Council;
- the Deputy Secretary of Transportation (chair);
- the Under Secretary of Transportation for Policy (vice chair);
- the Assistant Secretary for Research and Technology of the Department of Transportation;
- the Assistant Secretary for Budget and Programs of the Department of Transportation;
- the General Counsel of the Department of Transportation;
- the Chief Information Officer of the Department of Transportation;
- the Administrator of the Federal Aviation Administration;

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<sup>1</sup> “Not later than 1 year after the date of establishment of the Council, and not less frequently than annually thereafter until December 31, 2026, the Council shall post on a publicly accessible website a report describing the activities of the Council during the preceding calendar year.”

- the Administrator of the Federal Highway Administration;
- the Administrator of the Federal Motor Carrier Safety Administration;
- the Administrator of the Federal Railroad Administration;
- the Administrator of the Federal Transit Administration;
- the Administrator of the Maritime Administration;
- the Administrator of the National Highway Traffic Safety Administration;
- the Administrator of the Pipeline and Hazardous Materials Safety Administration; and
- any other official of the Department of Transportation, as determined by the Secretary.

As noted below, as one of its initial actions in 2022, DOT updated the NETT Council charter to operationalize the NETT Council under the new statutory requirements.

## Highlights of NETT Council Activities

The Department took several notable actions in 2022 to renew the NETT Council and fulfill its mission within DOT, consistent with requirements and direction outlined in IJJA.

### Update to NETT Council Charter

In September 2022, DOT updated the NETT Council’s charter via DOT order 1120.34A. Most significantly, pursuant to 49 U.S.C. § 313(b)(1)(P), the updated charter added the Assistant Secretary for Transportation Policy and a Policy Advisor for Labor to the NETT Council membership, in addition to updates to align the charter with requirements outlined in IJJA. The Department also reestablished a NETT Technical Working Group (TWG) of senior technical staff to support and advise the work of the NETT Council.

### Stakeholder Engagement

#### [Request for Comment](#)

In Spring 2022, DOT published *Request for Comment; Non-Traditional and Emerging Transportation Technology Council; Non-Traditional and Emerging Transportation Technology (NETT) Council* that sought public input on a range of topics pertaining to the NETT Council, including priority technologies and innovations for the group to review.<sup>2</sup> The RFC received 49 responses. Comments were received from a variety of sectors, with industry and non-profits contributing the largest amount. The technologies most frequently referenced included hyperloop, advanced air mobility, automated vehicles, electric vehicles, hydrogen technologies, data sharing standards, micromobility, and impact of emerging transportation technologies on the climate.<sup>3</sup> References to specific technologies were both supportive and unsupportive of NETT Council engagement. The responses provided valuable input, but also highlighted a wide range of potential topics for the NETT Council, rather than a clear direction or focus area for future activities. Additionally, the definition of “nontraditional and emerging” varied widely across the responses.

<sup>2</sup> <https://www.regulations.gov/document/DOT-OST-2022-0016-0001/comment>

<sup>3</sup> The Department previously determined that, if a hyperloop system employs maglev technology, the necessary oversight authority for that system exists under the Federal Railroad Administration’s jurisdiction (see *Pathways to the Future of Transportation* (<https://www.transportation.gov/policy-initiatives/nett/pathways-future-transportation>)).

### Additional Stakeholder Meetings Upon Request

On a periodic basis, the NETT Council conducts briefings with stakeholder organizations. In 2022, the NETT Council and TWG members met with several groups, including organizations seeking clarity on how to engage with DOT on novel transit and aviation technologies.

### Topic Identification

DOT identified several preliminary topics for consideration by the NETT Council beginning in 2022. These topics were identified based on a combination of stakeholder input offered via the Spring 2022 RFC, ongoing stakeholder engagement conducted by DOT's Operating Administrations and Secretarial Offices, and review and expertise offered by the NETT Council TWG.

Technologies that (1) were at a sufficient level of maturity for government engagement, (2) aligned with Departmental priorities, and (3) did not fall under an existing regulatory framework were considered as a topic for NETT Council engagement. Potential topics were evaluated using the following factors:

- Alignment with the FY 2022-26 DOT Strategic Plan and the DOT Innovation Principles
- Current technology readiness level
- Anticipated date of readiness for commercial use in the United States
- Potential type(s) of action needed:
  - Evidence of regulatory and/or programmatic needs, gaps, or uncertainties
  - Need for cross-modal coordination
  - Gap in existing relevant Operating Administration activities
  - Information and/or clarification(s) needed

The following sections discuss the proposed topic areas in more detail, including the scope and objectives for each.

### Advanced Air Mobility (AAM) Intermodal Integration

The NETT Council identified a need to consider the multimodal implications of emerging AAM concepts, particularly focused on how future AAM facilities can equitably serve communities and integrate effectively with other transportation modes and multimodal facilities. Working through a new Advanced Air Mobility Interagency Working Group established to implement the requirements of the Advanced Air Mobility Coordination and Leadership Act (AAMCLA)<sup>4</sup>, the NETT Council will explore the following issues:

- Assess alignment of potential multimodal AAM benefits with DOT priorities
- Identify existing relevant DOT activities, resources, products, and authorities as they relate to the planning, coordination, funding, and operation of multimodal facilities designed for AAM operations
- Identify and define potential DOT roles and responsibilities in areas relevant to multimodal vertiports
- Provide input to AAMCLA Interagency Working Group to inform development of National AAM Strategy

### Digital Infrastructure (DI) Deployment Considerations

Digital Infrastructure was identified as a priority area by the NETT Council since digitalization has the power to improve communication and operation within each mode as well as between the modes. In 2022, the NETT Council chartered a working group with representatives from the Federal Aviation

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<sup>4</sup> <https://www.transportation.gov/mission/office-secretary/office-aviation-and-international-affairs/advanced-air-mobility/advanced>; <https://www.congress.gov/117/plaws/publ203/PLAW-117publ203.pdf>

Administration, Federal Highway Administration, Federal Motor Carrier Safety Administration, Federal Railroad Administration, Federal Transit Administration, Maritime Administration, and the Office of the Secretary of Transportation (including the Offices of Policy, Research and Technology, and General Counsel). The Digital Infrastructure Working Group goals include:

- Define digital infrastructure, constituent components, and relevant use cases
- Identify existing programs and activities that relate to DI (including funding programs, relevant guidance, research)
- Identify specific stakeholder needs and propose needed NETT work product(s), potentially including guidance/guidelines
- Explore tools and processes that DOT can use to address stakeholder needs and shape DI
- Clarify DOT authorities and responsibilities across modes as they relate to DI, including relevant guidance, funding eligibility, grant programs, and financing

### Multimodal Battery Safety

Multimodal battery safety was identified as a focus topic for the NETT Council due to potential issues related both to the use of batteries as a power source and transport of battery powered devices across multiple modes of transportation. Following preliminary discussions with subject matter experts, the Council determined that significant work is currently underway through NHTSA and through an interagency work group convened by the Pipeline and Hazardous Materials Safety Administration (PHMSA), which to date has focused on outreach, research, enforcement, and regulatory issues associated with battery safety. The NETT Council is planning for additional discussion to determine whether further coordination is needed and, if so, whether the NETT Council is the most appropriate forum.

### Meetings Held

The NETT Council met three times during calendar year 2022, each time convened by the Secretary in his ex officio capacity, or the Deputy Secretary and/or Under Secretary of Transportation for Policy in their chair and vice-chair roles. Focus areas for meetings included the following (see Appendix A for more extensive summaries of each meeting):

#### March 2022 Meeting

The NETT Council held its inaugural meeting on March 14, 2022, with Secretary of Transportation Pete Buttigieg providing opening remarks. The meeting included discussion on the envisioned structure and purpose of future NETT Council activities, with a focus on articulating and balancing the respective roles of the public and private sectors with respect to emerging transportation technologies; the importance of collaboration; and the role of the NETT Council as an entryway for stakeholder engagement.

#### August 2022 Meeting

The NETT Council met on August 18, 2022, to review the content collected from the Request for Comments highlighted above and discuss potential next steps.<sup>5</sup> The NETT Council also conducted a preliminary discussion on potential topics for consideration, which were identified based on input from the RFC and subsequent review and discussion with modal subject matter experts.

#### October 2022 Meeting

The NETT Council met on October 3, 2022, to review the shortlist of topics for consideration, which were identified during the previous meeting and expanded on by a NETT Technical Working Group (TWG) of

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<sup>5</sup> <https://www.federalregister.gov/documents/2022/03/09/2022-04728/non-traditional-and-emerging-transportation-technology-nett-council-request-for-comment>

senior technical staff from across DOT. Topics included the following and are discussed in greater detail in Appendix A:

1. Digital Infrastructure Deployment Considerations
2. Advanced Air Mobility (AAM) Intermodal Integration
3. Multimodal Battery Safety

Additional topics discussed at the meeting include the Transforming Transportation Advisory Committee (TTAC),<sup>6</sup> which had recently closed its nomination period and the expected interfaces between the internal NETT Council and external TTAC.

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<sup>6</sup> <https://www.transportation.gov/priorities/transformation/transforming-transportation-advisory-committee>

# Appendix A: Meeting Summaries

## March 2022 Meeting

The NETT Council met on March 14, 2022, with Secretary Buttigieg providing opening remarks. The Secretary noted the continuing advancement of transportation technologies and the need to coordinate across modal administrations, as well as the need to address the increasing pace of innovation in alignment with the DOT's Innovation Principles.

Following the opening remarks, Under Secretary of Transportation for Policy Carlos Monje facilitated a discussion on the envisioned structure and purpose of future NETT Council activities. Council members noted the importance of focusing on cross-modal issues that are not adequately addressed by market forces, such as safety, equity, accessibility, and environmental impacts.

Additional discussion centered on the following themes:

- **Roles and Responsibilities of the Public and Private Sectors** – The NETT Council is well-positioned to communicate public sector expectations to private sector innovators prior to engagement. The Council has a responsibility to steer the implementation of innovative technologies in line with public sector goals.
- **Technology Maturity** – The NETT Council should consider technologies that have advanced beyond the initial research phase but have not yet been fully deployed. When prioritizing topics, the Council should clearly justify the investment of government time and resources. Topics considered should include both transformative ideas and related or derivative technologies that may have significant cross-modal impacts. Existing technologies that are not yet fully utilized due to real or perceived risks may also fall under the purview of the Council. Finally, both immediate needs and potential future regulatory considerations should be addressed.
- **Collaboration Frameworks** – Mechanisms are needed to support both cross-modal and cross-office collaboration. The NETT Council should explore opportunities to incorporate various perspectives when considering regulatory and policy issues.
- **Stakeholder Engagement** – The NETT Council can be used as a mechanism to engage with external stakeholders, including private industry, the labor community, and underserved populations. The Council should develop strategies to increase the visibility of Requests for Comment (RFC) or other communications materials.

## August 2022 Meeting

The NETT Council met on August 18, 2022, to review the content collected from the RFC and discuss potential next steps.

The group discussed potential overlap between the work of the NETT Council and other internal groups, including the Regulatory Leadership Group (RLG), which is intended for technology or initiatives that are further along in the development cycle. While there may be some overlap on gap assessment, the NETT Council could serve as a venue for high level policy development and research, earlier in the development lifecycle than technologies or issues considered by the RLG. The goal is for the two groups to be as complementary as possible.

The NETT Council reviewed a list of topics for consideration, which were identified based on input from the RFC and subsequent review and discussion with modal subject matter experts. The potential topics included:

1. Digital Infrastructure Deployment Considerations – Discussion focused on the varying and sometimes competing definitions of “Digital Infrastructure,” the applicability of the topic across transportation modes, and the relevancy of topics like data, privacy, and cybersecurity.
2. AAM Intermodal Integration – Discussion focused on the need to understand how emerging aircraft and service types will fit into the broader transportation system. The group agreed that it would be important to carefully identify and avoid overlap with existing FAA authorities, but that coordination would be valuable around issues like grant eligibility and planning considerations for multi-modal facilities.
3. Multimodal Uncrewed Aircraft System (UAS) Applications – The NETT Council confirmed that FAA already has extensive support and outreach functions for applications of UAS in modal missions (e.g., infrastructure inspection), though periodic review of these activities through the NETT Council may have value.
4. Multimodal Battery Safety – The NETT Council discussed the multimodal interests in the safe transport of batteries and their use in propulsion systems. The group agreed that the topic warranted further consideration, particularly given prominent incidents involving electric vehicles, bikes, and scooters.
5. Cross-Cutting Driving Automation Impacts – The NETT Council discussed whether there are cross-modal issues of driving automation that could benefit from discussion by the NETT Council and tentatively agreed that automation is already being addressed in other forums (including existing working groups and centers of excellence), but that members should continue to bring forward ideas if there are appropriate roles for NETT.

## October 2022 Meeting

The NETT Council met on October 3, 2022 to review the shortlist of topics for consideration, which were identified during the previous meeting and expanded on by the TWG. Topics included:

1. Digital Infrastructure Deployment Considerations – Anticipated actions include defining the term “digital infrastructure,” evaluating current DOT projects in this area, and determining what needs are not being met. NETT Council members expressed the desire to include a focus on cyber resiliency and to develop an inventory of programs that provide eligible funding.
2. AAM Intermodal Integration – The initial stage of work would include cataloguing current activities in this area and clarifying potential DOT roles and responsibilities. Equity, sustainability, and multimodal access are critical considerations.
3. Multimodal Battery Safety – The initial stage of work would involve coordination around the safety of batteries in vehicles and batteries transported in vehicles, with a focus on documenting existing resources and identifying potential gaps. The scope of work would include coordinating with the modal research and technology offices to identify gaps in research activities.

Additional topics discussed at the meeting included the TTAC, which had recently closed its nomination period.<sup>7</sup> The NETT Council will coordinate with TTAC as needed.

Members also discussed the NETT Council Guidelines, which the Council was required to produce within its first year to develop and establish DOT-wide processes, solutions, and best practices for identifying and managing nontraditional and emerging transportation technology projects. A draft of the Guidelines document was shared with members for feedback.

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<sup>7</sup> <https://www.transportation.gov/priorities/transformation/transforming-transportation-advisory-committee>

